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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/573,707	03/27/2006	Mitsunobu Yoshida	1003510-000165	3545

21839 7590 12/01/2009
BUCHANAN, INGERSOLL & ROONEY PC
POST OFFICE BOX 1404
ALEXANDRIA, VA 22313-1404

EXAMINER

HARRIS, GARY D

ART UNIT	PAPER NUMBER
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1794

NOTIFICATION DATE	DELIVERY MODE
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12/01/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/573,707	Applicant(s) YOSHIDA ET AL.	
	Examiner GARY D. HARRIS	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 July 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 6-20 is/are pending in the application.
- 4a) Of the above claim(s) 6-8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 9-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 07/06/2009 have been fully considered but they are not persuasive. Applicant argues the following:

Watanabe et al. JP4-170012 amorphous metal ribbon forms the magnetic core contacts the epoxy resin coating only at the outermost surface thereof. The metal ribbon is wound upon each other and would not be magnetic metal thin plates partially in contact with one another by an application of pressure. However, the range of pressure is not given in the claim, additionally when a ribbon is wound it is layered and would have some degree of pressure.

Regarding the volume resistivity compared with applicants (comparative example 2); the range of volume resistivity is 9 orders of magnitude which would cover resistivity of soft, hard and semi-hard magnetic materials and combinations thereof. Additionally, the claims are not commensurate in scope with comparative example 2. The allegation of not having resistivity is not proof

Regarding the argument that Pettigrew warns against using hard magnetic materials; applicant's claim 1 includes nanocrystalline magnetic metal which would encompass both soft, hard and semi hard magnetic materials.

Applicant's amendments to claims 1 & 15 are acknowledged by examiner.

Claims 1-3, &, 9-20 are examined in the instant application as follows:

Claim Rejections - 35 USC § 102 / 35 USC § 103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3, 9-13, 15 & 16 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Watanabe et al. JP 404170012A.

As to Claim 1, 15 & 16, Watanabe et al. JP 404170012A discloses a magnetic core formed by winding an amorphous metal ribbon (plate similar to applicants disclosure) with a flexible epoxy resin coating (applicant's high molecular compound) which are known in the art to include polyurethane, acrylic and cyanoacrylics. As can be seen in the figure below the structure has at least two layers that are partially in contact with one another.

Watanabe et al. does not disclose the volume resistivity. However, this would be an inherent feature as applicant is claiming a magnetic metal and a high molecular weight resin used for a magnetic core. Although the prior art does not disclose resistivity as it relates to applicant's claim, the claimed properties are deemed to be inherent to the structure in the prior art since the Watanabe et al. reference teaches an invention with a substantially similar structure and chemical composition as the claimed invention. Products of identical structure and composition cannot have mutually exclusive properties. The burden is on the Applicants to prove otherwise. (See MPEP 2112.02)

Regarding the process limitation in which the two or more magnetic metal plates are partially in contact with one another by applying pressure so that the high molecular compound that is positioned between the two or more magnetic metal thin plates is pushed out. This is considered a process limitation in a product claim. Absent a showing to the contrary, it is Examiner's position that the article of the applied prior art is identical to or only slightly different than the claimed article. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985). The burden has been shifted to Applicant to show unobvious difference between the claimed product and the prior art product. *In re Marosi*, 218 USPQ 289 (Fed. Cir.

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1983). The applied prior art either anticipated or strongly suggested the claimed subject matter. It is noted that if Applicant intends to rely on Examples in the specification or in a submitted declaration to show unobviousness, Applicant should clearly state how the Examples of the present invention are commensurate in scope with the claims and how the Comparative Examples are commensurate in scope with the applied prior art.

Alternatively, a resistivity as claimed would be obvious to one of ordinary skill in the art.

In the event it is shown that Watanabe et al. does not disclose the claimed invention with sufficient specificity, the invention is obvious because Watanabe et al. discloses the claimed constituents and discloses that they may be used in combination. One would optimize the coating layer constituents such that a coefficient of elasticity on the magnetic core would minimize the noise attenuation and maximize the magnetic properties and be a results effective variable MPEP 2144.05 that would be optimized by one of ordinary skill in the art through routine experimentation in minimizing attenuated noise and optimizing magnetic properties.

As to Claim 2, Watanabe et al. JP 404170012A it is interpreted that the epoxy coating would cover not less than 50% as applicant discloses using similar epoxy resin system in the reduction of attenuated noise. It would have been optimized by one of

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ordinary skill in the art through routine experimentation to require a coating covering not less than 50% as claimed to reduce attenuation noise of the magnetic core.

As to Claim 3, Watanabe et al. JP 404170012A examiner interprets the substrate as a surface and the epoxy being used on the substrate and would encompass the claim.

As to Claim 9-12, Watanabe et al. JP 404170012A discloses a magnetic core and inductor. Additionally, the intended use of the instantly claimed apparatus is noted, however, the intended use does not patentably distinguish said claimed apparatus over prior art. The intended use of the claims does not structurally limit the apparatus. In addition, the prior art apparatus is capable of performing the desired function.

As to Claim 13, Watanabe et al. JP 404170012A teaches a flexible epoxy resin coating (applicant's high molecular compound) which are known in the art to include polyurethane, acrylic and cyanoacrylics and ketones.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 14, 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe et al. JP 404170012A in view of Pettigrew et al. US 4,960,651.

As to Claim 14, Watanabe et al. JP 404170012A discloses the use of epoxy but does not disclose the use of polyimide resin, a sulfone resin, and an amide-imide resin systems. However, Pettigrew et al. teaches the use of polyimide (manufactured by ICI) in order to achieve a high magnetic signal in the security gate (Col. 14, 15, Line 65-69, 1-5 respectively). It would be obvious to select an engineering resin such as a polyimide resin, a sulfone resin, and an amide-imide resin system to achieve a high magnetic signal. Additionally, the use of this type of engineering resin system is well known in the art.

As to Claim 17 & 18, Watanabe et al. JP '012 discloses a magnetic core is formed by winding an amorphous metal ribbon (magnetic metal thin plates) and an epoxy resin with a large imaginary part forming the magnet in which applying a flexible epoxy resin the vibrations from the magnetic core can be attenuated and noise reduced. Therefore by increasing the number of layers the attenuated noise would further be reduced. It would have been obvious to one skilled in the art to increase the number of metal ribbon windings (magnetic metal thin plates) to five or more in order to reduce the attenuation noise. Additionally Pettigrew discloses a multi-layered structured as shown in figure 2 & 5. The structure is made having a series of layers being coated with a

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polymeric (thermoplastic/ thermoset) including a semi-hard magnetic material (Col. 13, Line 42-55). The laminations utilize a coated polymer web and a thermoplastic (glue) with the deactivation sheet being between 10 and 20 microns and a magnetic material requiring a hysteresis loop shape (Col. 15, Line 24). It would have been obvious to one skilled in the art to utilize a multilayer structure of Pettigrew '651 to obtain the desired magnetic properties and hysteresis loop shape.

As to Claim 19 & 20, Watanabe et al. JP '012 discloses using an epoxy (thermoset). However, Pettigrew discloses using an emulsion glue (thermoset) or a heated thermoplastic glue (thermoplastic). Since thermoplastics and thermosets are readily substituted with one another (Col. 15, Line 17-24). It would have been obvious to one skilled in the art to substitute a thermoplastic for a thermoset as disclosed by Pettigrew.

5. Claims 1-3 & 9-16 rejected under 35 U.S.C. 103(a) as being unpatentable over Pettigrew et al. US 4,960,651, and further in view of Jin et al. US 7,106,163.

As to Claim 1, 15 & 16, Pettigrew et al. '651 discloses magnetic layers (interpreted as two or more) in partial contact (via discrete islands) (Col. 9, Line 47-64) utilizing Fe-Si-B alloys (col. 5, Line 54-59) similar to applicant. Pettigrew et al '651 discloses the magnetic output being dependent on the thickness of the magnetic material but, does not disclose the resistivity of the layered structure. However, Jin et al. '163 discloses a polypropylene thermoplastic (high molecular compound) in contact with a magnetic material and manipulation of permeability by addition of soft magnetic materials (utilizing

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JIS 0505 resistivity) overlapping applicants resistivity (see figures 3 & 4). It would have been obvious to one skilled in the art to manipulate the resistivity in the Pettigrew '651 invention in order to control the relative permeability of the core member as taught by Jin et al. 163 (Col. 7, Line 30-56). Additionally, this would be optimized by one of ordinary skill in the art through routine experimentation MPEP 2144.05 that would be optimized by one of ordinary skill in the art through routine experimentation manipulating the volume percent of magnetic material as disclosed by Jin (see figure 4).

As to Claim 2-3, Pettigrew et al. '651 discloses a polymer (applicant's high molecular compound) over a two layer magnetic component being made of an amorphous metal and a stainless steel (Col. 14, Line 22-54) and sectional area magnetic output being dependent on the thickness of the magnetic material (Col. 11, 12, Line 65-68, 1-9 respectively) but, does not disclose resistivity. However, as previously disclosed in claim 1, Jin et al. '163 discloses a polypropylene thermoplastic (high molecular compound) in contact with a magnetic material and manipulation of permeability by addition of soft magnetic materials (utilizing JIS 0505 resistivity) overlapping applicants claim (see figures 3 & 4). It would have been obvious to one skilled in the art to require a resistivity from 0.1 to 10^8 ohm-cm in the Pettigrew '651 invention in order to control the relative permeability of the core member as taught by Jin et al. 163 (Col. 7, Line 30-56).

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As to Claim 5, Pettigrew et al. '651 discloses the use of amorphous metal and silicon steel similar to applicant (Col. 5, Line 23-45).

With respect to claims 9-12, the intended use of the instantly claimed apparatus is noted, however, the intended use does not patentably distinguish said claimed apparatus over prior art. The intended use of the claims does not structurally limit the apparatus. In addition, the prior art apparatus is capable of performing the desired function.

As to Claim 13, Pettigrew et al. '651 discloses the high molecular compound (polymer film) over a two layer magnetic component being made of an amorphous metal and a stainless steel (Col. 14, Line 22-54) and sectional area magnetic output being dependent on the thickness of the magnetic material (Col. 11, 12, Line 65-68, 1-9 respectively) but does not disclose the polymer being utilized. However, Jin '163 discloses the use of resins such as polyester and thermosetting resins such as silicone resin (silicon containing resin) or any mixture that would be a favorable insulating material (Col. 5, Line 13-27). It would have been obvious to one skilled in the art to utilize polyester, a thermosetting and/or silicon containing material in order to optimize insulating material properties.

As to Claim 14, Pettigrew et al. '651 discloses the high molecular compound (polymer film) over a two layer magnetic component being made of an amorphous metal and a stainless steel (Col. 14, Line 22-54) and sectional area magnetic output being

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dependent on the thickness of the magnetic material (Col. 11, 12, Line 65-68, 1-9 respectively) but does not disclose the polymer being utilized. Jin '163 discloses the use of a polyphenylene sulfide (PPS) which examiner interprets as being a sulfone containing resin for insulating properties (Col. 12, Line 12-19). It would have been obvious to use a sulfone containing resin in order to enhance insulating properties.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GARY D. HARRIS whose telephone number is (571)272-6508. The examiner can normally be reached on 8AM - 5PM EST.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Ruthkosky can be reached on 571-272-1291. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/G. D. H./Gary D. Harris
Examiner, Art Unit 1794

/Kevin M Bernatz/
Primary Examiner, Art Unit 1794

November 23, 2009